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MILITARY THOUGHT (USSR): The Defeat of Enemy Aviation Groupings in a Theater of Military Operations During a Non-Nuclear Period

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THE DEFEAT OF ENEMY AVIATION GROUPINGS IN A THEATER OF MILITARY OPERATIONS DURING A NON-NUCLEAR PERIOD

by
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During a troop offensive in which nuclear weapons are not used (but where there is a constant threat of their surprise use), one of the most important tasks is combatting the delivery vehicles of nuclear weapons: tactical aviation and operational-tactical missiles.

Without dwelling on all of the questions concerning the operational employment of the branches of the armed forces and the arms of service in carrying out this important and complicated task during operations in a theater of military operations, let us examine the employment of the air forces.

First of all, we shall note that, according to the views of the leaders of the aggressive NATO bloc, military actions must, as a rule, begin with surprise massive air strikes on the air bases and the aviation control points and means of the opposing side. This is also confirmed by actual practice. Thus, the war in Korea in 1950 began with massive air actions, and the events in Egypt in 1956 with the intensive use of Anglo-French aviation; it was the same when Israel unleashed its aggression against the Arab countries of the Near East in 1967.

The enemy's emphasis on using massive air strikes as widely as possible, first of all against air bases and other ground objectives which assure the combat effectiveness of our aviation, indicates that combat actions in a theater of military operations will begin with a fierce struggle to gain and maintain air supremacy.

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When one considers the strength of enemy aviation groupings (including the possibility of his using various means of destruction) and his resoluteness of purpose, there are grounds for believing that the struggle to gain and maintain air supremacy will be an extremely complex task. In carrying out this task, moreover, our aviation must rely mostly on its own forces and only partly on assistance from air defense troops, or, for that matter, on naval forces in operations against aircraft carriers.

Under such conditions, neither the strategic rocket forces nor front troops will be in much of a position to participate in the conflict with enemy aviation.

This struggle is complicated even more under modern conditions by the necessity for simultaneously combatting a powerful enemy air defense system.

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Thus, three vital tasks face our air forces: gaining air supremacy by defeating a powerful enemy aviation grouping and air defense system; engaging in combat with his missile/nuclear weapons; and supporting our own ground forces in their offensive drive.

Since the attempt to carry out all of these tasks simultaneously would lead inevitably to the splintering of our forces, our aviation efforts must be concentrated on the main task. For the conditions of the Western Theater of Military Operations, this can only mean the defeat of enemy aviation and carrier groupings.

Only after defeating enemy aviation and winning air supremacy can the efforts of our air forces, mainly front aviation, be directed to combined combat actions with ground forces; and only when this occurs can the ground forces exploit their superiority of forces over the enemy in order to thrust forward and defeat the grouping which is opposing them.

The enormity and complexity of the task of defeating an enemy air grouping in a theater of military operations, the substantial quantity of forces and means required to carry it out, and the resulting complexity of organizing coordination and control make it necessary to set up an air operation.

For an air operation under the conditions of the Western Theater of Military Operations it is advisable to use the following: the air armies and air defense troops of the fronts of the first echelon, and of the reserve front; the aviation large units of the Warsaw Pact countries; the heavy bomber corps of long-range aviation (with the exception of those carrying out similar missions in other theaters); naval submarine and aviation forces; border formations and large units of the Air Defense Troops of the Country; and, in many cases, airborne landing troops as well. In other words, it is advisable to use all of those forces and means which are capable of destroying, with conventional strike means, enemy aviation and its means of control

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and support, on the ground, in the air, and on the oceans and seas adjacent to the theater of military operations.

The leading role among these forces and means assigned to an air operation will be played by aviation, which must have not only quantitative superiority but also well-defined qualitative features, the most important of which is a tactical radius of actions allowing strikes to be mounted to the full depth to which enemy air bases are located. It is also important to have qualitative superiority in aircraft radioelectronic equipment, including sights for firing on ground and air targets.

As regards a quantitative superiority in forces, this can be created in the first place by regrouping aircraft on the ground and maneuvering them in the air. Superiority in aircraft flight range and in ways of basing aircraft can be an important factor in calculating the relative strength of the forces of the two sides.

The difficulty of defeating an enemy aviation grouping, especially under the conditions in the Western Theater of Military Operations, is caused by the high combat readiness of NATO troops and aviation, which are capable of initiating combat actions within a short period of time using either nuclear or conventional means of destruction.

Since this is the case, the success of an operation can be assured only by seizing and maintaining the initiative in operations. As the experience of history testifies, to seize the initiative in combat with enemy aviation it is necessary to deliver a surprise massive strike against his aviation grouping at its bases and against his means of control. At the very least, this strike should be strong enough to deprive enemy aviation of the capability to mount an organized retaliatory strike. After the first massive strike has been mounted, combat actions must be initiated with the aim of completely destroying enemy strike and reconnaissance aircraft on their airfields and in the air. There must be no slackening of efforts in combat with enemy aviation until decisive results have been achieved, since this would make possible the restoration of enemy forces, which, in turn, would inevitably bring on a long drawn-out struggle in the air, and consequently, on the ground as well.

The success of an initial massive strike is assured by formulating a plan for the operation well in advance, preparing for the operation in secret, and initiating combat actions by surprise, with coordination among the participating forces clearly organized. All of these requirements can be met only by having a single command and centralized control of the operation.

An air operation to defeat an enemy air grouping is a component part of a strategic operation in a theater of military operations and may include part of the territory of adjacent theaters and bodies of water.

The broad expanse of territory covered, and the participation of large units and formations from the various branches of the armed forces, make it a foregone conclusion that such an operation can be organized only by higher military authority.

Higher military authority determines the objectives of an air operation, designates the forces and means for its conduct, and organizes the command of the operation, coordination among forces, and rear support. It is advisable to assign the direct planning of an air operation to the Main Staff of the Air Forces, under the direction of the General Staff with the participation of the main staffs of the branches of the armed forces, the staffs of long-range aviation and of the air armies of groups of forces, the staffs of military districts, and the staffs of fleets.

In combat with enemy aviation groupings, it is possible to attain the most critical objectives using only conventional strike means; and this is confirmed not only by the experience of the last war but also by postwar events and armed conflicts, particularly in the last two to three years.

The ~~advantages to be gained by initial massive strikes~~ make it necessary that the maximum possible quantity of aviation forces be drawn upon for participation in an air operation. The presently developing tendency to use sixty to seventy percent of the aircraft of long-range aviation and up to thirty percent of front aviation leads, as is shown by calculations and by analyses of training exercises, to a ~~significant~~ decrease in the capability to achieve the decisive results needed in combat with enemy aviation. Moreover, ~~a weak initial strike~~, reserving aviation in this way, will inevitably provoke a retaliatory strike by the enemy, first of all against the airfields at which the aviation forces of our "nuclear echelon" are concentrated. This echelon will thus be threatened with destruction at its airfields, a more real threat than being destroyed in the air while carrying out missions in an air operation in which conventional weapons are used. 50X1-HUM

Regarding the advisability of lowering the percentage of ~~aviation forces held in reserve~~, it is important to clarify the question of how very operationally important it is for aviation to make "immediate" use of nuclear weapons at the start of a period of

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nuclear actions. In principle, it appears that the "immediate" use of nuclear weapons will be called for, above all, in those instances in which it will make possible the destruction of enemy nuclear means and prevent their being used in a nuclear strike; or in instances in which "immediate" use is dictated by the need to use our own nuclear means so that they will not be destroyed by the enemy. This principle also exerts a decisive influence on the organization and implementation of a strike by nuclear forces.

The way in which nuclear forces are used in a non-nuclear period (before the onset of the nuclear period) will differ significantly from the way in which they are used in an operation which begins with a nuclear strike. This is explained by the fact that a great many of the tasks of a nuclear strike can be carried out with conventional strike weapons before the non-nuclear period ends, and the nuclear weapons will then be used to complete these tasks. These tasks may include the defeat of enemy aviation, carrier, and missile groupings. If decisive results have been achieved in defeating enemy aviation groupings with conventional strike means by the beginning of the nuclear period, such groupings will no longer constitute targets for immediate massed strikes with nuclear weapons. Every operating airfield discovered by reconnaissance after an air operation, as well as every newly-discovered enemy missile launcher, will be destroyed immediately, without waiting for the beginning of the period of nuclear actions.

In addition, considering the experience of training exercises and war games, we may assume that the main targets of a nuclear strike by front aviation in the initial nuclear strike made by a front will be the advancing enemy combined-arms large units. In military actions which begin with conventional strike means, and before nuclear weapons are used, the large units of the first echelon will be fairly widely strung out along the front line, so the targets of the strikes will be the advancing reserves. Therefore, the need will scarcely arise for the immediate use of massive nuclear air strikes even against such targets as combined-arms large units.

All of the foregoing enables us to draw the conclusion that, in a non-nuclear period, full combat readiness for the use of nuclear weapons must be maintained by medium-range strategic rocket forces, rocket troops of the fronts, and the minimum necessary number of delivery aircraft in each aviation formation or large unit of the air forces. During combat actions conducted with conventional weapons, the size and composition of the "nuclear echelon" may be changed by order of the Supreme High

Command, but the main air forces must be used to defeat the main enemy aviation groupings in the ground theater of military operations and in the adjacent oceans and seas.

Under modern conditions, the defeat of enemy air defense forces and means is of decisive significance to the freedom of action of our own aviation. Just as the ground forces, in working toward the final goal of their combat activity, must always destroy the troop grouping facing them, so must our aviation, in carrying out any mission (fire, reconnaissance, or transport), overcome enemy air defenses. This is precisely why combat with air defenses is the most vital element in the struggle for air supremacy.

Since it determines the success of the defeat of enemy aviation, the initial massed strike of an air operation can produce the expected results only if strike aviation overcomes the air defense opposition, while still keeping enough of their forces intact to carry out the mission and, of course, if the main body of enemy aviation is at its airfields at the moment of the strike. It goes without saying that, in addition to these basic conditions, to achieve success the aviation strike groups must find their targets and have sufficient means at their disposal to strike them effectively. These are the main problems in defeating an enemy air grouping.

Let us examine each of them individually. The main aggressive means of the enemy air defense system at the present time are SAM systems and fighter-interceptors.

In the central air defense zone, on West German territory, the SAM batteries are deployed in two belts: the Hawk belt along the East German and CSR borders; and the Nike belt at a distance of one hundred to two hundred kilometers west of the Hawk belt. Hawk fire covers the eastern border zone of the theater to a depth of one hundred fifty to two hundred kilometers, while Nike fire covers all of West Germany.

Enemy air defense fighter aircraft are based, one to three squadrons per field, at airfields located one hundred fifty kilometers or more from the eastern borders of NATO throughout the entire territory which they cover.

According to training exercises and war games, the destruction of enemy air defenses is limited (because of the lack of forces and means) to the flight zones of our aircraft. But such a solution to the problem has serious drawbacks. Zones or corridors can be used

primarily by large units of our long-range and military transport aviation on flights to the enemy rear area. And front aviation, particularly reconnaissance and fighter-bomber aviation, cannot fly in previously prepared corridors, because their targets will be located throughout the entire zone of the offensive. Consequently, each flight of a reconnaissance aircraft, like each flight of fighter-bombers, must be supported in some manner.

Since to all intents and purposes it is impossible to destroy all SAM batteries and to neutralize all radioelectronic means, it becomes necessary to destroy not only the SAM batteries in the flight zones of long-range and military transport aviation, but also in all areas in which front aviation will be active. If these areas cannot be determined with sufficient accuracy, then air defense means in the entire zone of air actions must be destroyed. This would make it impossible for the enemy to move his Hawk systems from the secondary to the main axes of our aviation operations.

In order to determine the forces which are to carry out this mission, it is advisable to take into account that the strike targets must be mainly Hawk batteries. The Nike-Hercules systems are of second strike priority, since their minimum range in altitude is 1500 meters and they therefore pose no threat to aircraft flying at lower altitudes.

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At the end of 1967, the NATO armed forces had eighty-eight Hawk batteries in the Central Theater of Military Operations. At an average operating norm of one squadron of fighter-bombers per battery, eighty-eight squadrons (ten fighter-bomber divisions) are required to destroy these batteries. Depending on the availability of aviation in the theater, it may take several flights to destroy the Hawk missiles (particularly since not only do the SAM batteries have to be destroyed, but air defense warning and guidance posts and centers must be neutralized). In such an operation, the first flight of fighter bombers may strike Hawk batteries in the flight zones and on the flight axes of front bomber aviation and long-range aviation.

Given the importance of the task of combat with enemy air defenses and the large number of forces and means required to carry it out, it becomes obvious that the main efforts of front aviation must, from the beginning of an air operation, be concentrated on destroying the control means and organs of enemy air defense and aviation.

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Designation and Characteristics of target	Strike means	Dimensions of area to be struck	Probability of hitting strike area	Average number of projectiles needed to strike target	Required number of aircraft with combat load for four positions	
					To strike one target	To destroy 70% of the target
Parked fighter aircraft (12 in revetments of 15 X 15 meters)	Missiles	10 X 10	0.14	1	1.35	12
	Cannons	Single Aircraft	0.28	1.6	1.12	10

At the same time that the groups are attacking air defense means and control organs, the strike groups of bombers and fighter-bombers must proceed to enemy air bases.* The effectiveness of their actions may be judged by the data in the following table.

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As is evident from the table, the greatest damage to aircraft on the ground will be achieved by cannon fire; in second place are missiles.

No less effective against parked aircraft are bomber strikes from horizontal flights. Thus, seven or eight TU-16 aircraft mounting a strike with RBK 500 AO-10 from an altitude of 800 to 1000 meters against twelve aircraft in revetments will hit sixty to seventy percent of the targets. To strike aircraft at fifty-two fields (assuming that each of them has three parking areas with twelve aircraft), it would be necessary to send out about 1200 TU-16 bombers or about 1900 fighter-bombers (with a corresponding tactical radius of operation).

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To carry out night missions requires the marking and illumination of targets, as a result of which the allotment of forces for each target will increase by a flight or a detachment of aircraft. Strike effectiveness will drop sharply under adverse weather conditions when aiming is done with radar sights against a datum aiming point.

Thus, air forces using conventional strike weapons are capable of destroying enemy aircraft at their airfields, but it must be a surprise strike to be successful. This can be achieved to a certain extent by taking measures to combat enemy radioelectronic means and by using the most advantageous flight altitudes and routes. The majority, or a substantial proportion, of enemy aircraft can also be caught at their airfields when a strike is mounted under conditions which preclude or hamper their massed take-offs.

For example, at a war game conducted by the Commander-in-Chief of the Air Forces in 1968, the "East", exploiting the movement of the terminator from east to west at dawn, took off at dawn and mounted its initial massed strike on enemy aircraft at their airfields before they could take off.

The destruction of the runways at enemy airfields precludes the take-off of any significant number of aircraft. It is obvious that if the runways at all enemy airfields in a theater of military operations are destroyed simultaneously, even those of his aircraft which succeed in taking off before the strike will be put out of action when they come in to land.

Calculations show that, with a high degree of bombing accuracy, 336 TU-16 bombers will be needed to put 240 airfields out of service in a twenty-four hour period (with a tactical coefficient of 1.4). These calculations are approximate and are meant to give an idea of the aviation forces required.

The choice of specific methods for the destruction of enemy aircraft must be based on a careful evaluation of the situation: the enemy airfield network; its extent of usage; the existence of dummy airfields; the established flight routine and the daily routine of flight personnel; the location of aircraft parking areas; and the air defense means at each airfield. Equally careful attention must be given to the enemy air defense system in zones of combat operations, and to his communications.

The nature of enemy operations may exert a substantial influence on the starting time of an air operation. Particularly, since, according to NATO doctrine, armed combat may begin with massed strikes by their aviation against our front aviation bases and against our air defense means and control posts.

The possibility of such an initiation of armed combat in a theater of military operations, even in a non-nuclear period, requires that our air forces have a high level of combat readiness and be capable of mounting a preemptive strike against enemy aviation at his airfields.

Air operations to defeat an enemy air grouping must therefore be planned in advance. The plan must be continuously revised as the situation changes. The initial massed strike must be planned with particular care and thoroughness.

The command and staffs must be ready to implement the plan at any moment upon receipt of orders from higher military authority.

A plan for an air operation to destroy an enemy air grouping will specify: the objective of the operation and its basic concept; the composition of participating forces and resources allotted for them; tasks for long-range aviation, front aviation formations, naval aviation, Air Defense Troops of the Country, and for other troops if they are to be called upon to participate; and the organization of coordination, control, and support.

In accord with the plan of an air operation, formations and large units work out detailed plans for combat actions and a schedule of combat flights for the first day of the operation. Success in fulfilling tasks depends on careful planning. An example of this is provided by Israeli air operations (5 June 1967), in which each crew was assigned its task with precise delineation of the flight corridors, altitude, speed, time of passing each control point, bombing run, and methods of attacking the target.

Depending on the combat capabilities of front aviation, its mission in the initial massed strike may be the destruction of: enemy air defense forces and means, first of all along the axes and in the zones of action of our own aircraft and our long-range and military-transport aviation; control posts and means, and enemy aircraft in the air, and at airfields within the zone of their tactical radius of operation. In its successive strikes, front aviation will complete the tasks assigned to it in an air operation.

The tasks of long-range aviation in an initial massed strike will be the destruction of the aircraft in the main groupings of enemy tactical and strategic aviation in the theater; the destruction of airfield runways and the main control points of NATO air defenses and air forces, primarily those outside the zone of combat operations of front aviation; and the destruction, jointly with naval forces, of strike aircraft carriers on adjacent oceans and seas. Subsequent strikes by long-range aviation are designed to complete the defeat of enemy air groupings.

As a rule, air operations to defeat an enemy air grouping must begin with a massed strike by all participating forces. It is advisable to conduct subsequent combat actions on the basis of decisions made by the commanders of aviation formations and large units, making maximum use of all forces day and night. There must be wide use here of concentrated strikes by air units and of actions by small air groups until they complete all their assigned tasks.

Since the necessary degrees of destruction when using conventional weapons can be achieved not only at once, but also with repeated strikes, the duration of an operation will be determined by the relationship between the number of participating aviation forces and the number of assigned tasks. However, the defeat of an enemy air grouping throughout a theater of military operations must be carried out within the shortest possible time, since the prolongation of an air operation leads to increased losses of our aircraft. The conduct of an air operation must therefore be organized in such a way that the enemy will not have time to regroup his forces, restore his airfields, or bring in aircraft from other axes.

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Front aviation may constitute the first echelon of the operational make-up of air forces in an initial strike. The efforts of this echelon will be directed toward neutralizing enemy air defenses and control points in the area of combat operations and toward destroying his aircraft at forward airfields.

The second echelon may be long-range aviation which, exploiting the successful strike of front aviation and under the cover of front fighter aviation, will cross the FEBA air defense zone and deliver a strike against the delivery aircraft of enemy tactical aviation. Large units of long-range aviation assigned to joint operations with the navy against enemy carrier strike forces will be given specific tasks by the naval commander responsible for organizing the strike.

Simultaneously with the initial strike against enemy aviation, measures must be taken for defending our own airfields and troops. The success of an air operation will depend on the capability of the forces and means of fronts and of the Air Defense Troops of the Country to prevent a retaliatory attack by enemy aviation against our aircraft on the ground, against airfields, and against control points and means.

The repulse of massed enemy air raids and the provision of cover for troops based at airfields and for rear area installations will be handled by fighter aviation in coordination with SAM and antiaircraft artillery by destroying enemy aircraft and pilotless means in the air. Consequently, because of the way in which it is carried out, and because of its purpose of depriving the enemy of freedom of action in the air, cover is one of the methods in the struggle for air supremacy and one of the tasks which helps defeat an enemy air grouping.

Our fighters will also engage in combat with enemy fighters while supporting the combat actions of reconnaissance aircraft, fighter-bombers, and bombers of front and long-range aviation.

After the objective of an air operation has been achieved, i.e., the defeat of the enemy air grouping, combat for retention of air supremacy will be conducted while carrying out missions to cover troops and while assuring the freedom of action of our aviation. There must be no pause in the air struggle with enemy aviation even if, for example, there is an interruption in aggressive troop actions. We must take into account that the enemy is in no way restricted in the use of his air means. He will immediately exploit an interruption in our air activity in order to attempt to seize the initiative.

Every airfield which the enemy restores must therefore be a strike target of our aviation, just as any SAM or antiaircraft artillery battery which we discover must be instantly destroyed.

The struggle to gain and maintain air supremacy may be broken off at the same time that ground engagements are broken off after the capitulation of the enemy.

Since formations and large units of different branches of the armed forces take part in an air operation, it is advisable to create an operations command to which all of the participating forces and means are subordinated. In accord with a previously

prepared plan, and upon the decision of the higher military authority, the operations command will begin to carry out its responsibilities.

Depending on the nature of the operation and the forces participating in it, the command of an air operation may be headed by the Commander-in-Chief of the Air Forces. In this case the Main Staff of the Air Forces will act as the staff of the operation.

The operations commander will coordinate the actions of formations and large units of the branches of the armed forces participating in the air operation; direct the mounting of the initial massive strike; determine the sequence in which the forces of aviation large units and formations are committed; and revise their tasks during the operation to conform with the situation. Special attention must be given to conducting aerial reconnaissance to locate enemy air reserves that are still intact and to determine any indications that they are preparing retaliatory strikes.

Aviation combat actions after a massed strike will be organized in order to maintain constant pressure on the enemy and to consolidate the results of the massive strikes.